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ABSTRACT

Antibodies, and particularly human antibodies, are disclosed that demonstrate activity in the treatment of demyelinating diseases as well as other diseases of the central nervous system that are of viral, bacterial or idiopathic origin, including neural

5   dysfunction caused by spinal cord injury. Neuromodulatory agents are set forth that include and comprise a material selected from the group consisting of an antibody capable of binding structures or cells in the central nervous system, a peptide analog, a hapten, active fragments thereof, agonists thereof, mimics thereof, monomers thereof and combinations thereof. The neuromodulatory agent has one or more of the

10   following characteristics: it is capable of inducing remyelination; binding to neural tissue; promoting Ca^{++} signaling with oligodendrocytes; and promoting cellular proliferation of glial cells. Amino acid and DNA sequences of exemplary antibodies are disclosed. Methods are described for treating demyelinating diseases, and diseases of the central nervous system of humans and domestic animals, using polyclonal IgM

15   antibodies and human monoclonal antibodies sHIgm22(LYM 22), sHIgm46(LYM46) ebvHIgM MSI19D10, CB2bG8, AKJR4, CB2iE12, CB2iE7, MSI19E5 and MSI10E10, active fragments thereof and the like. The invention also extends to the use of human antibodies, fragments, peptide derivatives and like materials, and their use in diagnostic and therapeutic applications, including screening assays for the

20   discovery of additional antibodies that bind to cells of the nervous system, particularly oligodendrocytes.